

### REMARKS

This paper is being filed in response to the Office Action dated September 10, 2002. Applicants respectfully request reconsideration of the above-identified application in light of the amendments and remarks presented in the instant Response.

Claims 1, 3, 6-11, and 15 are pending. Claim 1 has been amended. New claims 16-18 have been added. Claims 1, 3, 6-11, and 15-18 will be pending upon entry of the instant amendment. Claim 1, as amended herein, is fully supported by the specification as filed at, *inter alia*, original claim 1 and, therefore, does not constitute new matter. New claims 16-18 are fully supported by the specification as filed at, *inter alia*, original claims 1 and 10 and, therefore, do not constitute new matter.

A rewritten claim appears in the preceding "IN THE CLAIMS" section. Attached hereto is a marked-up version of the changes made to claim 1 by the instant amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE" and is included pursuant to 37 C.F.R. §1.121(c)(ii). Should any discrepancies be discovered, the version presented in the preceding "IN THE CLAIMS" section shall take precedence.

As a preliminary matter, Applicants thank the Examiner for acknowledging that claims 3 and 15 are allowable and that claim 11 will be allowable if rewritten in independent form.

### Claims Are Novel

Claim 1 has been rejected under 35 U.S.C. §102(b) as allegedly anticipated by the complement of Hillier et al. (Accession AA398583)(hereinafter "Hillier"). The Examiner has alleged that claim 1 is not patentable over the sequence of Hillier since the **complement** of a

**portion** of the Hillier sequence allegedly encodes a protein that has amino acids 19-146 of SEQ ID NO:4 and inherently has lysozyme activity.

Applicants traverse this rejection and assert that Hillier does not anticipate the amended claim 1 or new claim 16. Hillier fails to teach the sequence of SEQ ID NO:4, and therefore, fails to anticipate claim 1, as amended herein.

Hillier also fails to anticipate new claim 16. Hillier teaches a nucleotide sequence that encodes a putative human adenylate cyclase, type II. *See* Hillier, GenBank record, line captioned "Putative ID". Hillier is completely devoid of teaching regarding the complementary strand and fails to teach even a putative protein encoded by the complement. Hillier teaches neither the **length** nor the **reading frame** for any polypeptide encoded by the complementary strand. Moreover, Hillier fails to teach an isolated DNA as claimed since nucleotides 1-151 and 536-549 do not encode any amino acids of amino acids 19-146 of SEQ ID NO:4. Therefore, since Hillier fails to teach an isolated DNA having lysozyme activity, Hillier fails to teach each and every element of claim 16. Accordingly, Applicants respectfully request withdrawal of this rejection.

### **Claims Are Nonobvious**

Claims 6-10 have been rejected under 35 U.S.C. §103(a) as allegedly obvious over U.S. Patent 5,643,758 to Guan et al. (hereinafter "Guan") in view of the complement of the Hillier sequence. The Examiner has alleged that Guan teaches expression vectors, prokaryotic and eukaryotic host cells, and methods for making and purifying any protein fused to the *E. coli* maltose-binding protein. The Examiner has acknowledged that Guan fails to teach a DNA molecule encoding a protein comprising the amino acid sequence of amino acids 19-146 of SEQ

ID NO:4 wherein the protein has lysozyme activity. However, the Examiner has alleged it would have been obvious to one of ordinary skill in the art to combine the DNA of Hillier with the vectors, cells and methods of Guan.

Applicants traverse this rejection and assert that claims 6-10 are not obvious over the cited documents and assert that this rejection is improper for at least four reasons. First, according to MPEP §2143.01, references may not be combined if the asserted combination modifies the principle of operation. Here, Applicants assert that combining the adenylate cyclase of Hillier with Guan to produce a protein having lysozyme activity requires the artisan to modify the principle of operation of Hillier. Second, Applicants respectfully assert that the rejection is improper under MPEP §2141.01, paragraph III since the asserted combination of Hillier and Guan requires hindsight. Selection of the **complement** of **selected** nucleotides of Hillier, nucleotides 152-535, as encoding a protein having lysozyme activity can **only** be achieved by referring to the disclosures of the instant application. Therefore, this rejection improperly relies on hindsight rather than the content of the prior art. Thirdly, this rejection is improper because one of ordinary skill in the art would not have had any expectation of successfully obtaining a protein having lysozyme activity by combining the adenylate cyclase-encoding sequence of Hillier with the teachings of Guan as required by MPEP §2143.02. Nothing in Hillier or Guan teaches or suggests such an expectation. Finally, the rejection is improper under MPEP §2143.03 for failing to teach or suggest each and every element of the claims. Neither Guan nor Hillier teach or suggest using only the complement of nucleotides 152-535 of Hillier to obtain a protein having lysozyme activity. Therefore, Applicants respectfully request withdrawal of this rejection.

**Objection to Claim 11**

The Examiner has objected to claim 11 as dependent on a rejected claim, namely claim 10, but otherwise reciting allowable subject matter. The Examiner has suggested amending claim 11 to independent form and incorporating all of the limitations of claim 10.

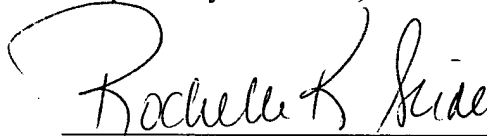
Applicants traverse this objection and assert that claim 11 is in condition for allowance in view of the forgoing amendments and arguments. In addition, Applicants respectfully invite the Examiner's attention to new claim 17.

For the foregoing reasons, Applicants believe that all pending claims are in condition for allowance and respectfully request prompt issuance of a Notice of Allowance.

Applicants have enclosed the fee required for submitting additional independent claims. Applicants believe that no additional fees are due with this response. Nevertheless, any required fees may be charged to Deposit Account No. 02-4377. Two copies of this sheet are enclosed.

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Respectfully submitted,



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Enclosures

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

In this section, added text is marked with double underlining. *e.g.* added text, and deleted text is marked by a single strikethrough, *e.g.* ~~deleted text~~.

**IN THE CLAIMS**

Claim 1 has been **amended** as follows:

1. (THRICE AMENDED) An isolated DNA molecule comprising a nucleotide sequence encoding a protein comprising the amino acid sequence of SEQ ID NO:4 ~~or of amino acids 19-146 of SEQ ID NO:4~~, wherein said protein has lysozyme activity.